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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,631	12/18/2000	Christopher Patrick	QCPA990347	5613

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QUALCOMM INCORPORATED  
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EXAMINER

WANG, TED M

ART UNIT PAPER NUMBER

2611

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/741,631	<b>Applicant(s)</b> PATRICK, CHRISTOPHER	
	<b>Examiner</b> Ted M. Wang	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-8,10-15,17-21,23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10-15,17-21,23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed 07/24/2006, with respect to the rejection(s) of claims 1, 3-8, 10-15, 17-21, 23 and 24 under 35 USC § 103(a) has been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gronemeyer (US 6,304,216).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-8, 10-15, 17-21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison et al. (US 5,752,218) in view of Gronemeyer (US 6,304,216).

- With regard claims 1 and 8, as shown in figures 1-6, Harrison et al. discloses a method comprising:

determining a code phase of each among a plurality of received signals, wherein said received signals are GPS (column 6, line 47-column 8, line 58); and transmitting a propagation time difference of received signals (column 7,

lines 16-30, column 8, line 24-column 10, line 34 and abstract).

Harrison et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching a time difference between the code phases of at least one pair among the plurality of received signals.

However, Gronemeyer teaches a time difference between the code phases of at least one pair among the plurality of received signals (Fig.7 element CP1 162, CP2 174 and column 8 line 62 –column 9 line 64, especially, column 9 lines 39-64) in order to improve the signal to noise ration so that the range of the satellite is accurately determined (column 5 lines 44-59).

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Gronemeyer in which determine a time difference between the code phases of at least one pair among the plurality of received signals, in addition to Harrisons' propagation time difference determination method so as to improve the signal to noise ration so that the range of the satellite is accurately determined.

- With regard claims 15, 21 and 23, which is an apparatus claim related to claim 1, as shown in figures 1-6, Harrison et al. discloses an apparatus further comprising:

- a receiver (Figure 1 element 2) configured to receive a plurality of signals;

- a correlator (for example, Fig.1 element 8) configured to determine a code phase for each among the plurality of received signals (column 6, lines 3-58, and column 6, line 47-column 8, line 58); and

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- With regarding claims 3, 10 and 17, Harrison et al. further discloses wherein each among the plurality of received signals has a corresponding periodic code (Gold code, column 6, line 51-67), and  
wherein each among the code phases relates to a predetermined position within the corresponding periodic code (column 6, line 51-58).
- With regarding claims 4, 5, 11, 12, 18 and 19, Harrison et al. further discloses wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence spread spectrum modulated signal (column 6, lines 3-13).
- With regard claims 6 and 13, Harrison et al. further discloses the method further comprising receiving a composite signal, wherein each among the plurality of received signals is based at least in part on at least a portion of the composite signal (column 6, lines 13-41).
- With regard claims 7, 14 and 20, Harrison et al. further discloses  
wherein the determining a code phase of each among a plurality of received signals comprises calculating a correlation, for each among the plurality of received signals, between a corresponding code sequence and a signal based at least in part on the composite signal (column 6, lines 3-58, and column 6, line 47-column 8, line 58),  
wherein each among the plurality of received signals has a corresponding periodic code (Gold code, column 6, line 51-67), and  
wherein each among the code phases relates to a corresponding

predetermined position within the corresponding periodic code, and

wherein the code sequence relates at least in part to the corresponding periodic code (Gold code, column 6, line 51-67).

□ With regard claim 24, Harrison et al. further discloses

a reference receiver (Fig.1 and 1B element 16 and column 6 lines 14-22 and 42-46) configured to receive signals from a plurality of space vehicles (Fig.1 element 12 and column 6 lines 23-32) and transmit information; and

a field receiver (Fig.1 and 1A element 14 and column 6 lines 14-22 and 33-40) configured to receive signals from a plurality of space vehicles (Fig.1 element 12 and column 6 lines 23-32) and to receive the information,

wherein the reference receiver determines a reference code phase for each among at least a first and a second one of the signals, and

wherein the field receiver determines a field code phase for the first one of the signals, and

wherein the field receiver determines a field code phase for the second one of the signals at least in part from the information (column 8, line 65-column 10, line 34).

Harrison et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching a time difference between the code phases of at least one pair among the plurality of received signals.

However, Gronemeyer teaches a time difference between the code phases of at least one pair among the plurality of received signals (Fig.7 element

CP1 162, CP2 174 and column 8 line 62 –column 9 line 64, especially, column 9 lines 39-64) in order to improve the signal to noise ratio so that the range of the satellite is accurately determined (column 5 lines 44-59).

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Gronemeyer in which determine a time difference between the code phases of at least one pair among the plurality of received signals, in addition to Harrisons' propagation time difference determination method so as to improve the signal to noise ratio so that the range of the satellite is accurately determined.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ted M. Wang

Ted M Wang  
Examiner  
Art Unit 2611